

Claims:

1. A process for preparing trichlorosilane (HSiCl_3) by catalytic hydrodehalogenation of silicon tetrachloride (SiCl_4) in the presence of hydrogen, in which at least one metal or metal salt selected from among the elements of main group 2 of the Periodic Table of the Elements is used as catalyst at a temperature in the range from 300 to 1 000°C.
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2. The process as claimed in claim 1,
10 wherein calcium, strontium, barium, calcium chloride, strontium chloride, barium chloride or a mixture of at least two of the abovementioned components is used as catalyst.
3. The process as claimed in claim 1 or 2,
15 wherein a supported catalyst is used.
4. The process as claimed in any of claims 1 to 3,
20 wherein a catalyst which has been applied to a support selected from the group consisting of low-aluminum zeolites, leached glass, fused silica, activated carbon, porous siliceous supports or SiO_2 supports is used.
5. The process as claimed in any of claims 1 to 4,
25 wherein the supported catalyst used has a catalyst content, calculated as element, of from 0.1 to 10% by weight.
6. The process as claimed in any of claims 1 to 5,

wherein

an SiCl₄/H₂ mixture having a molar ratio of from 1:0.9 to 1:20 is brought into contact with the catalyst.

5 7. The process as claimed in any of claims 1 to 6,

wherein

the reaction is carried out in a fixed-bed reactor, in a fluidized-bed reactor or in a moving-bed reactor.

10 8. The process as claimed in any of claims 1 to 7,

wherein

the catalytic reaction is carried out at a temperature in the range from 600 to 950°C and a pressure of from 0.1 to 100 bar abs.

15 9. The process as claimed in any of claims 1 to 8,

wherein

the reaction is carried out at a space velocity of from 2 000 to 30 000 h⁻¹ and the gas stream has a linear velocity of from 0.01 to 10 m/s in the reactor.

20 10. The process as claimed in any of claims 1 to 9,

wherein

HSiCl₃ is isolated from the product mixture or the product mixture is used further directly.